

**ABSTRACT****PROCESS FOR MULTIPLE ACCESS AND MULTIPLE TRANSMISSION OF  
DATA IN A MULTI-USER SYSTEM FOR THE POINT TO MULTIPOINT  
DIGITAL TRANSMISSION OF DATA OVER THE ELECTRICITY NETWORK**

This process applies to a number of user kits (A, B,...X) and a head-end kit (1) communicating over the electricity network (2) by means of an upstream channel and a downstream channel.

In essence, the process comprises:

- access by multiple user kits (A, B,...X) in the upstream channel and the sending of multiple information frames by the head-end (1) in the downstream channel simultaneously by means of OFDMA/TDMA/CDMA multiplexing;
- a criterion to dynamically assign each carrier so as to maximize transmission capacity in both the upstream and downstream channels;
- adjustable quality of service according to the type of information and the user that requires the transmission; and
- dynamic allocation of bandwidth by means of constantly calculating and monitoring the signal-to-noise ratio.